

DIGITAL FINANCIAL INCLUSION: OBSERVATIONS AND INSIGHTS FROM HONG KONG'S VIRTUAL BANKS

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I INTRODUCTION

Digital banks, also known as “virtual banks” in Hong Kong, have a role to play in the jurisdiction’s financial inclusion agenda. According to a Google survey published in 2020, an estimated 1.8 million Hong Kong adults are expected to have a virtual bank account by 2025.¹ Likewise, in a 2019 PricewaterhouseCoopers digital banking customer survey of 4,500 customers across Hong Kong, Singapore, and Malaysia, more than half of respondents in Hong Kong showed interest in becoming a virtual bank customer.² However, thirty-eight percent of respondents in Hong Kong also said that they did not trust virtual banks with their personal data, while thirty-three percent did not believe virtual banks to be financially stable.³ The same report also showed that although trust in traditional banks is high, customers who experienced frustrations with traditional banks were twice as likely to sign up with virtual banks.⁴ It is estimated by Bloomberg that virtual banks will snare as much as thirty percent of the revenue of traditional banks in Hong Kong,⁵ and Moody’s has predicted that

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1. Susannah Binsted, *The Rise of Virtual Banks*, FINDER (Apr. 27, 2020), <https://www.finder.com/hk/virtual-banking-statistics> [<https://perma.cc/8LM9-2U7Y>].

2. Harjeet Baura, *Virtual Banking: Customers Take Charge – Are You Ready?*, PRICEWATERHOUSECOOPERS, 3 (Nov. 2019), <https://www.pwchk.com/en/industries/financial-services/banking-and-capital-markets/publications/2019-digital-banking-customer-survey.html> [<https://perma.cc/KT5V-UG6E>].

3. *Id.* at 5–6.

4. *Id.* at 12.

5. *Hong Kong Starts Granting Licenses for Virtual Banks*, STRAITS TIMES (Mar. 28, 2019), <https://www.straitstimes.com/business/banking/hong-kong-starts-granting-licenses-for-virtual-banks> [<https://perma.cc/HVJ3-TC2V>].

virtual banks may create significant competition for most traditional banks in Hong Kong, except for the four largest Hong Kong banks.⁶

This Article examines issues affecting virtual banks, specifically those issues related to the financial technology (fintech) disruption and dealing with alternative banking and finance. It covers an expansive interpretation of Hong Kong regulatory law regarding the requirements for the authorization of virtual banks, with an accompanying study and critique of the financial industry's collection and storage of digital data in relation to privacy, drawing inspiration from international norms. It then discusses those regulations in terms of their effect on digital financial inclusion. Finally, it evaluates some potential challenges facing fintech lenders, virtual banks included, in a regulatory environment that promotes digital financial inclusion while seeking to manage financial consumerism. This Article adds to the literatures of banking, finance, information technology management, and consumer protection law enforcement by analyzing the latest digital financial inclusion developments in Hong Kong, following the Hong Kong Monetary Authority's (HKMA) issuing of virtual bank licenses in 2019 in an effort to promote financial inclusion and fintech innovation.

This Article focuses on the connection between financial inclusion and digital financial inclusion as it assesses the role of virtual banks in Hong Kong's financial inclusion agenda because this connection may be key to virtual banks' success. Given that virtual banks are incorporated in and will operate from Hong Kong, a small market that has long been dominated by traditional banks, including those six recently designated by the HKMA as domestic systemically important banks (D-SIBs),⁷ virtual banks may not be able to provide complete financial inclusion for two reasons. First, under Hong Kong's current legal regime, virtual banks are, in general, subject to the same legal requirements as traditional banks, which prompts the question of whether and how this might hinder digital financial inclusion. This Article undertakes the original contribution of examining why Hong Kong's inflexible capital requirement, unclear demands on digital banking innovation, and outdated laws against technical risks may render its financial inclusion policy less effective. Second, limitations inherent in the business models of virtual banks can also hinder digital financial inclusion. The gaps and shortfalls in meeting financial inclusion needs will be expounded more

6. *Research Announcement: Moody's – Entry of Virtual Banks is Credit Negative for Incumbent Hong Kong Banks*, MOODY'S INVS. SERV. (May 14, 2019), https://www.moody's.com/research/Moody's-Entry-of-virtual-banks-is-credit-negative-for-incumbent-PBC_1175869 [https://perma.cc/L75K-WZCJ] (noting that these banks “have strong franchises that attract sticky deposits and therefore are less vulnerable to deposit competition from virtual banks”).

7. According to the HKMA, authorized institutions designated as D-SIBs as of January 1, 2021 are (1) The Hongkong and Shanghai Banking Corporation Limited; (2) Bank of China (Hong Kong) Limited; (3) Standard Chartered Bank (Hong Kong) Limited; (4) The Bank of East Asia, Limited; (5) Hang Seng Bank Limited; and (6) Industrial and Commercial Bank of China (Asia) Limited. See Press Release, H.K. Monetary Auth., Designation of Domestic Systemically Important Authorized Institutions (Dec. 30, 2020), <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2020/12/20201230-3/> [https://perma.cc/JUQ8-EPHP] (linking to the latest list of D-SIBs in the Annex).

clearly in Part IV of this Article, as they may come from either regulation or virtual banks' business models.

Where this Article is concerned, "traditional banks" refers to brick-and-mortar banks that may not be dependent on the internet,⁸ whereas "digital financial inclusion" is specifically associated with virtual banks operating on the online banking model. Taking a technology-enabled approach, virtual banks are positioned to expand financial inclusion through algorithmic know your client (KYC)⁹ and predictive analytics. This technology can make onboarding clients faster and easier, meeting customer needs while simultaneously achieving regulatory compliance. Although digital banking makes banking more accessible, some of its drawbacks, such as technological profiling, may actually impede financial inclusion.

The Article proceeds as follows. Following this introduction, Part II provides a basic anatomy of virtual banks in Hong Kong and their qualification requirements. Part III expounds on the regulatory environment and legal framework for virtual banks, as financial regulators in Hong Kong are revealing their intent to expand financial inclusion in the complex regulatory landscape for fintech. In the digital financial ecosystem, fintech is transforming finance and challenging current regulations related to financial inclusion. It therefore merits some consideration of whether virtual banks should be subject to some specific ex ante regulation that is not merely technologically neutral and general. This Part presents the main research findings of this Article as the author critiques Hong Kong's current legal regime for consideration by Hong Kong's financial regulators, lawmakers, and policymakers. Part IV summarizes the gaps and shortfalls in terms of the extent to which virtual banks meet financial inclusion needs, which may be caused by either regulation or virtual banks' business models. Part V offers some concluding remarks.

II

VIRTUAL BANKS IN HONG KONG AND THEIR QUALIFICATION REQUIREMENTS

This Part describes the virtual banking landscape in Hong Kong and the qualification requirements that virtual banks must meet to achieve authorization from the HKMA, as well as the relationship between virtual banking and fintech. It then discusses regulation of data privacy in the fintech world, before laying out how fintech can both help and hinder financial inclusion.

8. The terms "traditional banks," "brick-and-mortar banks," "incumbent banks," and "legacy banks" are used interchangeably in this Article.

9. The KYC due diligence procedures fit within the HKMA's anti-money laundering policy and guidelines whereby banks are required to verify the identity of their clients and evaluate the risks involved with maintaining a business relationship with them. Banks conduct KYC procedures when bank customers open accounts and as they periodically update their clients' KYC details. Furthermore, banks are required to continuously monitor transactions made through the bank accounts in order to reduce the risk of identity theft, money laundering, and the financing of terrorism or criminal organizations, to give a few examples.

As per the Guideline on Authorization of Virtual Banks,¹⁰ a virtual bank is defined as “a bank which primarily delivers retail banking services through the internet or other forms of electronic channels instead of physical branches.”¹¹ In a revised Guideline on Authorization of Virtual Banks published in 2018, the HKMA sets out principles for the authorization of virtual banks. This Guideline places particular focus on the required qualifications of virtual banks, including (i) the ownership structure; (ii) mandatory ongoing supervisory requirements; (iii) a physical presence in Hong Kong;¹² (iv) maintenance of technology-related risks and information security; (v) other risk management; (vi) the presence of a credible and viable business plan; (vii) an exit plan for the winding-up of business operations, should it become necessary; (viii) customer protection; (ix) outsourcing of computer or business operations of virtual banks to third-party service providers; and (x) capital requirements.¹³

A. The Current Landscape of Virtual Banking in Hong Kong

In an effort to shake up retail banking through fintech, the HKMA granted eight virtual bank licenses over a span of a mere three months between March and May of 2019. On March 27, 2019, the HKMA granted banking licenses under the Banking Ordinance to Livi VB Limited, SC Digital Solutions Limited, and ZhongAn Virtual Finance Limited.¹⁴ Later, in the same manner, the HKMA granted another banking license to WeLab Digital Limited on April 10, 2019.¹⁵ On May 9, 2019, the HKMA also licensed Ant SME Services (Hong Kong) Limited, Infinium Limited, Insight Fintech HK Limited, and Ping An OneConnect Company Limited to operate as virtual banks.¹⁶ Of these eight new virtual banks, three—Infinium, Livi, and SC Digital Solutions—are

10. The Guideline on Authorization of Virtual Banks was first issued by the HKMA on May 5, 2000 and subsequently updated on Sep. 21, 2012 under section 16(10) of the Banking Ordinance in Hong Kong. The Guideline was further revised on May 30, 2018. *See* H.K. MONETARY AUTH., BANKING ORDINANCE, AUTHORIZATION OF VIRTUAL BANKS: A GUIDELINE ISSUED BY THE MONETARY AUTHORITY UNDER SECTION 16(10), at 1 (2018), <https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2018/20180530e3a2.pdf> [<https://perma.cc/NQ2A-KYC6>] (explaining that the 2018 update supersedes the previous revised guideline).

11. *Id.*

12. *Id.* at 2–3 (explaining that “[it] is necessary to provide an office in Hong Kong for interfacing with” both the HKMA and customers). Distinct from a brick-and-mortar operating model, a virtual bank is nevertheless required to maintain a physical presence in Hong Kong as its principal place of business. This is an apt procedure for businesses that cover a large segment of retail customers.

13. *Id.* at 5.

14. Press Release, H.K. Monetary Auth., Granting of Virtual Banking Licenses (Mar. 27, 2019), <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2019/03/20190327-3/> [<https://perma.cc/79NX-7X94>].

15. Press Release, H.K. Monetary Auth., Granting of Virtual Banking License (Apr. 10, 2019), <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2019/04/20190410-4/> [<https://perma.cc/YK92-D2QT>].

16. Press Release, H.K. Monetary Auth., Granting of Virtual Banking Licenses (May 9, 2019), <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2019/05/20190509-3/> [<https://perma.cc/97YS-VLQ4>].

collaborations between financial institutions and technology firms,¹⁷ while Ping An OneConnect is an affiliate company of Pin An Group, an insurance giant in China. The main shareholders of the others (Ant SME Services, Insight Fintech, and WeLab Digital) are technology firms.¹⁸

Activities from some of the virtual banks in Hong Kong indicate that traditional banks, also, can partner with fintech firms to form virtual banks, which in turn could operate as separate legal entities or as part of traditional banks' existing business infrastructure.¹⁹ While virtual banks operate solely online, traditional banks can also provide more banking options—for example, speedy payment and transfers or easy account maintenance—to improve market choice, thereby promoting financial inclusion without necessarily being digital.

In theory, virtual banks, whether in the form of technology companies or subsidiaries of financial institutions—such as incumbent banks or insurance companies—can increase financial inclusion because exclusively online operation is a more cost-effective alternative to the physical building and infrastructure of traditional banks. As digital set-ups are cheaper, a greater number of entities such as virtual banks—along with fintech start-ups and online-based payment companies—join the supply side, improving market choice and increasing financial inclusion. Virtual banks in Hong Kong are expected to conduct the same customer due diligence (CDD) and record-keeping procedures as traditional banks.²⁰ Even so, use of big data makes it possible for virtual banks to approve

17. Sukrit Khatri, *A Skeptical Look at HK's 8 New Virtual Banks*, MEDIUM (May 22, 2019), <https://medium.com/swlh/a-skeptical-look-at-hks-8-new-virtual-banks-71bcd999a45d> [https://perma.cc/DC88-P56H] (explaining that owners of these three firms are, as indicated by the following parentheticals, (1) Infinium Limited (Tencent, ICBC Asia, Hillhouse Capital, and Hong Kong Exchanges and Clearing Limited (HKEX)); (2) Livi (Bank of China (Hong Kong), JD Digits, and Jardines); and (3) SC Digital Solutions (Standard Chartered Bank, HKT, PCCW, and Ctrip)).

18. See *id.* (explaining that these firms will not be a collaboration between financial firms and technology firms). Ant Financial, an affiliate company of the Chinese Alibaba Group, is a major shareholder of Ant SME Services. Insight FinTech's shareholders are AMTD and Xiaomi. WeLab Digital is owned by WeLab, a fintech start-up in Hong Kong.

19. For example, MOX Bank Limited ("MOX"), formerly known as SC Digital Solutions Limited, is a newly licensed virtual bank in Hong Kong launched by Standard Chartered Bank (Hong Kong) Limited, in partnership with PCCW, HKT and Ctrip Finance. As per MOX's website, "Mox is a licensed bank in Hong Kong under the name of Mox Bank Limited, a subsidiary of Standard Chartered Bank (Hong Kong) Limited." See MOX BANK LIMITED, *About Us*, <https://mox.com/about-us/> [https://perma.cc/Z2U6-FF9P]. Within MOX's corporate structure, however, nine of its twelve directorial members have previously held senior positions at Standard Chartered. See *id.* "The Directors [of MOX] consider the immediate holding company and ultimate holding company of the Bank to be Standard Chartered Bank (Hong Kong) Limited and Standard Chartered PLC respectively . . ." See MOX BANK LTD., CONDENSED INTERIM FINANCIAL STATEMENTS (UNAUDITED) 18 (June 30, 2020), https://vpr.hkma.gov.hk/statics/assets/doc/100326/fd_int/fd_int_0620_pt01_eng.pdf [https://perma.cc/6UZV-L4HJ]. As a subsidiary, MOX operates independently from its parent holding companies. Nevertheless, Standard Chartered Bank (Hong Kong) Limited's website invites clients to "[s]tep inside our Hong Kong virtual bank" as "[w]e believe our existing clients will become the first champions of this exciting new offering." See Deniz Güven, *Step Inside Our Hong Kong Virtual Bank*, STANDARD CHARTERED (May 29, 2019), <https://www.sc.com/en/navigate-the-future/hong-kong-virtual-bank/> [https://perma.cc/S8KL-9G65].

20. Bills Committee on Anti-Money Laundering and Counter-Terrorist Financing (Financial Institutions) (Amendment) Bill 2017 and Companies (Amendment) Bill 2017, Legislative Council Paper

loan applications within minutes, without any physical document proof. Since small and medium-sized enterprises (SMEs) are the backbone of Hong Kong's economy, virtual banks' establishment could be driven by demands to expand digital financial inclusion for those previously financially excluded and underserved, many SMEs included.

Virtual banks are expected to improve the financial inclusion situation in Hong Kong. When the HKMA invited applicants for virtual banks, it had a two-pronged goal: (a) to promote the application of fintech and innovation in Hong Kong to offer a new kind of customer experience; and (b) to promote financial inclusion, given that virtual banks' business target is retail customers, some of whom were previously denied access to the banking system. Increasing digital financial inclusion can lead to institutions taking on riskier customers. Yet even virtual bank account opening is closely linked to the Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) requirements, which were cited as reasons for traditional banks' practices of rejecting risky customers, a problem known as "de-risking."²¹ It remains to be seen whether virtual banks can maneuver technology to increase financial inclusion despite being subject to the same AML/CFT requirements.

Since the HKMA's regulatory aim is to enhance financial inclusion, it maintains "the view that virtual banks should not impose any minimum balance requirements or low-balance fees on customers."²² Yet it is unclear to what extent the HKMA expects the expansion of virtual banks to improve financial inclusion. Given that virtual banks are digital in nature, they are capable of either financial inclusion or exclusion. Digital financial inclusion occurs when virtual banks apply big data in meeting the KYC requirements. For example, some virtual banks do not require clients to provide physical identity cards or document proof, making bank account opening easier and faster. On the other hand, virtual banks are prone to relying on algorithms to make and rationalize decisions. Digital financial exclusion will likely result from such algorithmic profiling.

B. The Mechanics of Digital Banking

Unlike electronic banking—that is, online banking—which traditional banks can employ to diversify and assist their provision of services and products, virtual

No. CB(1)496/17-18, at 1 (2018), <https://www.legco.gov.hk/yr16-17/english/bc/bc07/reports/bc0720180124cb1-496-e.pdf> [<https://perma.cc/U4HK-S3VQ>]. See also Anti-Money Laundering and Counter-Terrorist Financing Ordinance, (2019) Cap. 615 (H.K.) (setting out the relevant CDD and record keeping requirements in Schedule 2).

21. See HONG KONG INSTITUTE OF CHARTERED SECRETARIES, BANK ACCOUNT OPENING SURVEY: CONTINUING DIFFICULTIES IN COMPANIES OPENING BANK ACCOUNTS IN HONG KONG 3 (July 2018), https://www.hkics.org.hk/media/publication/attachment/PUBLICATION_A_2418_HKICS_Bank_Account_Opening_Survey_Report_2018.pdf [<https://perma.cc/22RP-FAKY>].

22. See Press Release, H.K. Monetary Auth., Guideline on Authorization of Virtual Banks (May 30, 2018), <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2018/05/20180530-3/> [<https://perma.cc/48ZL-L4FS>] (explaining "that a key objective of introducing virtual banks in Hong Kong is to help promote financial inclusion by leveraging on these banks' IT platforms that would lower the incremental cost of taking in additional customers").

banks are internet-only banks.²³ Virtual banks are distinguishable from traditional banks because the latter simply use the internet as another channel to their customers, who use the internet in combination with other channels to access a host of banking services via bank branches for branch banking, telephones for telephone banking, and automated teller machines for ATM banking.²⁴ Virtual banking can be differentiated from electronic banking due to its lack of any reliance on physical infrastructure.²⁵ Simply put, while traditional banks maintain the branch system, virtual banks operate on the “no-branch model.” And unlike traditional banks, which provide the flexibility of a dual system—either online or offline—to accommodate customers, virtual banks do not offer the same flexibility, as they forgo the physical buildings and infrastructure of traditional banks in order to operate primarily through the internet.²⁶

The technology-enabled prowess of virtual banks keeps them abreast of the latest online business opportunities, likely through harnessing knowledge of their customers’ lifestyles and applying big data power to analyze customer movements and behavior patterns. This makes it easy for virtual banks to cross-sell financial products such as travel insurance, credit cards, loans, and savings deposits. There are pros and cons to the data-powered predictive analytics used by fintech banks²⁷ for cross-selling. The pros include market choice and personalized recommendations for customers of fintech banks. The cons could be exploitative selling or mis-selling and misuse of data.

C. Fintech Regulation and Data Privacy

Encouraging fintech innovation is not only compatible with other legal and regulatory objectives—including financial inclusion, stability and integrity, and consumer protection—but is also mutually reinforced through them.²⁸ The governance of fintech companies focuses on several key aspects of consumer protection which include, among others, fair treatment of customers, conflicts of interest management, standardized pre-contractual disclosure practices, transparency on fees and charges, customer complaint handling and redress mechanisms, and liability and settlement arrangement. Conflicts of interest, for

23. Christian N. Watson, *The Growth of Internet-only Banks: Brick and Mortar Branches are Feeling the “Byte”*, 4 N. C. BANKING INST. 345, 346 (2000).

24. See *id.* at 351–52 (explaining that Wells Fargo had no intention at the time to start Internet-only banking because it assumed customers preferred “to use the Internet in connection with its other four channels: traditional branches, supermarket offices, ATMs, and telephones”).

25. See *id.* at 349 (“The Internet banks are able to stay in business because of their amazing cost savings infrastructure (or lack thereof).”).

26. *Id.* at 346–47.

27. Different in concept from virtual banks, fintech banks refer to those banks that deploy financial technology in their provision of services or products. Fintech banks can include both virtual banks and traditional banks.

28. GLOBAL P’SHP FOR FIN. INCLUSION, 2014 FINANCIAL INCLUSION ACTION PLAN 2 (Sep. 2, 2014), http://www.g20.utoronto.ca/2014/2014_g20_financial_inclusion_action_plan.pdf [https://perma.cc/66KQ-MHDM].

example, can be managed by acquiring customers' consent, although customers are often unaware that boilerplate consents result in the sharing of their information or potential exploitation.

One crucial aspect of consent is online storage of data or customer information, an issue of great relevance to virtual banks. To enhance transparency, and as a good practice, banks can observe the internationally accepted privacy protection guidelines, revised and issued by the Organisation for Economic Co-operation and Development in 2013, by stating clearly in the privacy agreement where the customer data are stored.²⁹ Mutually beneficial partnerships between banks and fintech firms, with the help of consulting and analytics firms, allow fintech firms to scale their technology by accessing banks' large capital and customer bases, while banks gain assistance in harnessing customer data in order to improve services and product offerings.³⁰ By leveraging data's potential scale and power, fintech firms provide a data platform that "standardize[s] and clean[s] partner banks' data, source[s] additional data from third parties" such as social media firms including Facebook, Google, and WeChat, and tests data in a confined secure environment—that is, the fintech sandbox.³¹ There are legal implications with sourcing and testing data. As such, it is considered good practice by banks, including virtual banks, to obtain separate consent from their customers for the purposes of sourcing data from third parties, given that banks only own data with respect to customer identification, often collected during the KYC process.³² This data normally do not include additional information pertaining to consumers' spending habits and preferences, which is otherwise owned by social media firms, but can be used by banks for cross-selling purposes.

D. Fintech's Influence on Financial Inclusion

Particular characteristics of virtual banks that enhance financial inclusion include easier and faster bank account opening, easier ways to provide identity for compliance with KYC requirements, and quicker, algorithmically-driven decision-making for loan approval. Additionally, the imminent application of electronic identification (e-ID) will soon digitalize Hong Kong's population, increasing the likelihood that virtual banks' services will be more inclusive. Hong

29. Organisation for Economic Co-operation and Development [OECD], *The OECD Privacy Framework*, 100, (July 11, 2013), https://www.oecd.org/sti/ieconomy/oecd_privacy_framework.pdf [<https://perma.cc/6HRW-R8PM>] ("Generally, the emphasis on consent based on overly complex privacy policies that provide few real options and few limitations on collection and use diminish the effectiveness of privacy protections that are intended to support the individual's role in controlling his or her own personal data.").

30. INST. OF INT'L FIN. & CTR. FOR FIN. INCLUSION AT ACCION, *ACCELERATING FINANCIAL INCLUSION WITH NEW DATA 21–22* (2018), https://www.iif.com/portals/0/Files/private/finewdata_cfi.pdf [<https://perma.cc/BY22-NDSF>].

31. *See id.* at 22; *see infra* Part III.

32. H.K. OFFICE OF THE PRIVACY COMM'R FOR PERS. DATA, *GUIDANCE ON THE COLLECTION AND USE OF PERSONAL DATA IN DIRECT MARKETING 3* (Nov. 2012) https://www.pcpd.org.hk/english/publications/files/DM_e.pdf [<https://perma.cc/UEA4-T69K>].

Kong residents will in due course be issued a new e-ID that will give them easier access to online services offered by the government and, by extension, financial institutions.³³ Digital ID solution is a fundamental element of a KYC strategy for Hong Kong in the optimization of the CDD process and, ultimately, the increased penetration of financial inclusion in the territory.

Technology is an enabler. With the right technology, the right product offering, and the clear advantages that come with being more responsive and cost-effective than traditional banks, the eight new Hong Kong virtual banks will undoubtedly find a ready niche in a market where technology savvy clients may prefer “easier account opening . . . new credit card deals . . . (and cash back), and . . . more favorable credit lines to acquire assets,”³⁴ especially if one presupposes that virtual banks would appeal to retail customers by being more sensitive to, say, the financing needs of SMEs and individuals.

The possibility of virtual banks further restricting financial access, however, is quite alarming. While it is one thing for virtual banks to adopt intelligent fintech apparatuses to make risk assessment decisions, it is another matter for a smart machine to deny SMEs and individuals access to credit.³⁵ Reliance on automated decision-making can lead to digital profiling, which may undermine the “rationality of algorithmic decisions.”³⁶ Not only should these decisions be subject to review, particularly if they produce legal or similarly significant impacts on data subjects (for example, bank customers), but they also lack the margin of tolerance and discretion that might be expected by human regulatees who are cooperating with human enforcement agents. In this respect, European regulators have sufficient reason to doubt fintech’s effectiveness, and show an apparent readiness to bring human agents back into the loop.³⁷ Article 22 of the European Union’s General Data Protection Regulation (GDPR) stipulates that data subjects have a right not to be subject to decisions based solely on automated processing (which may amount to profiling).³⁸ This provision sets an archetypical standard of not granting licenses to fintech without some heavy qualifications to justify their deployments, for the simple reason that algorithmic decisions can be used to discriminate against data subjects.³⁹ There is, however, no equivalent provision to article 22 of the GDPR under the Hong Kong regime.

33. Nikki Sun, *Hong Kong to Launch New ‘Electronic Identification’ as Part of ‘Smart City’ Blueprint*, SOUTH CHINA MORNING POST (Oct. 14, 2017), <https://www.scmp.com/news/hong-kong/economy/article/2115365/hong-kong-launch-new-electronic-identification-part-smart> [https://perma.cc/Q6XD-7ZL7].

34. See Khatri, *supra* note 17.

35. See ROGER BROWNSWORD, LAW, TECHNOLOGY AND SOCIETY: RE-IMAGINING THE REGULATORY ENVIRONMENT 227 (John Paterson & Julian Webb eds., 2019) (“Now, while it is one thing for a smart machine to deny an agent access to credit, it is another matter for intelligent machines to make risk assessments . . .”).

36. *Id.* at 226.

37. *Id.* at 228.

38. Council Regulation (EU) 2016/679, art. 22, 2016 O.J. (L 119) 1.

39. See BROWNSWORD, *supra* note 35, at 228 (“While [article 22 of the GDPR] is extremely vague and open to all manner of interpretations, it puts down a marker: Europeans are not willing to grant a

III

THE REGULATORY ENVIRONMENT: POLICY AND REGULATION

In general, the banking regulatory environment, both normative and non-normative, aims to set and maintain coherent legal and regulatory standards for the purposes of risk prevention and mitigation. Consequently, regulatory standards are inevitably and closely tied to risks. For example, the HKMA's risk-based supervisory framework prescribes eight basic types of risks related to: credit, interest rate, market, liquidity, operations, and reputation, along with legal and strategic risks.⁴⁰ But other than those risks that are common to all banks with or without a physical presence, virtual banks are particularly vulnerable to technical risks, which may result in an invasion of privacy and security breaches because virtual banks operate solely online.

The current regime in Hong Kong does not subject virtual banks to specific *ex ante* regulation save for the Sandbox regime, which is, strictly speaking, a temporary mechanism instead of a specific regulation. The HKMA first launched the Fintech Supervisory Sandbox (FSS or Sandbox) in September 2016.⁴¹ In November 2017, the HKMA launched the FSS 2.0, which introduced the Fintech Supervisory Chatroom to facilitate regular and effective two-way communication between the regulator and the regulatee.⁴² The Sandbox regime is about developing a relationship between the regulator and a fintech start-up under which new technology can be tried out under close supervision but without the need to comply with some existing requirements, pending possible reformulation of the requirements when the technology is rolled out widely.

Regulations for virtual banks include, among others, the Banking Ordinance and Banking Rules,⁴³ the Anti-Money Laundering and Counter-Terrorist Financing Ordinance,⁴⁴ and the Personal Data (Privacy) Ordinance (PDPO).⁴⁵ Virtual banks are also governed by HKMA's Supervisory Policy Manual⁴⁶ and

social license for automated decision-making without some heavy qualifications about bringing humans back into the loop.”); *see also id.* at 223–24 (explaining that algorithms can import bias and covertly or overtly discriminate).

40. H.K. MONETARY AUTH., SUPERVISORY POLICY MANUAL, Risk Management Framework (IC-1) (2017), <https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/supervisory-policy-manual/IC-1.pdf> [<https://perma.cc/LY3G-SHAN>].

41. Press Release, H.K. Special Admin. Region, LCQ22: Support for Start-Up Enterprises (Feb. 7, 2018), <https://www.info.gov.hk/gia/general/201802/07/P2018020700348.htm> [<https://perma.cc/J9LP-YNUZ>].

42. *Id.*

43. *See* Banking Ordinance, (2019) Cap. 155 (H.K.); Banking (Capital) Rules, (2012) Cap. 155L (H.K.); Banking (Disclosure) Rules, (2012) Cap. 155M, (H.K.); Banking (Liquidity) Rules, (2015) Cap. 155Q, (H.K.); Banking (Exposure Limits) Rules, (2019) Cap. 155S, (H.K.).

44. Anti-Money Laundering and Counter-Terrorist Financing Ordinance, (2019) Cap. 615 (H.K.).

45. Personal Data (Privacy) Ordinance, (2018) Cap. 486 (H.K.).

46. *See* H.K. MONETARY AUTH., SUPERVISORY POLICY MANUAL, Introduction (IN) at 1 (2001), <https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/supervisory-policy-manual/IN.pdf> [<https://perma.cc/Y4GE-EG2W>] (“This Manual sets out the HKMA’s supervisory policies and practices, the minimum standards AIs [that is, Authorized Institutions] are expected to attain in order to

the non-legislative HKMA guidelines such as the Treat Customers Fairly Charter.⁴⁷ The following discussion will focus on the first three pieces of legislation as they relate to the minimum capital requirement, onboarding of clients, and data privacy protection. Notably, the regulatory framework has yet to catch on, considering that the PDPO is slated for legislative amendment.

A. Minimum Capital and Related Requirements

As emphasized by the HKMA, in order to protect banks and their customers, all licensed banks, including virtual bank licensees, must meet the HKMA's minimum paid-up capital requirement of HKD\$300 million, as stipulated in the Banking Ordinance⁴⁸ and the Banking (Capital) Rules.⁴⁹ The HKMA thus refuted a previous suggestion, raised during the consultation process, of "allowing a lower initial minimum paid-up capital requirement, similar to the level for deposit-taking companies," at HKD\$25 million, stressing that the Banking Ordinance does not provide the HKMA with any flexibility whatsoever to authorize a virtual bank without it meeting all of the authorization criteria.⁵⁰ By comparison, "[t]he UK set[s] the capital requirement for its virtual bank licensees at US\$5.8 million," which is equivalent to approximately HKD\$44.95 million, "but requires them to develop exit plans," with the regulatory intent to protect customers when virtual banks cease operations because of business model failures.⁵¹

Since the HKMA also imposes a similar exit plan requirement, it was suggested that the HKMA should reduce the minimum capital requirement, although it did not accept this argument.⁵² This combination of a high capital requirement and an exit planning requirement could be quite onerous, since a high capital requirement is not only burdensome on its own but virtual banks must also comply with a resolution planning requirement. It might be reasonable

satisfy the requirements of the Banking Ordinance and recommendations on best practices that AIs should aim to achieve.").

47. See Press Release, H.K. Monetary Auth., Treat Customers Fairly Charter (Mar. 28, 2014), <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2014/20140328e1.pdf> [<https://perma.cc/Z7CP-K7UV>] (explaining the Charter and its guiding principles).

48. Banking Ordinance, (2019) Cap. 155, § 97C(1) (H.K.). See also Press Release, H.K. Monetary Auth., Guideline on Authorization of Virtual Banks (May 30, 2018), <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2018/05/20180530-3/> [<https://perma.cc/manage/create?folder=14471>].

49. Banking (Capital) Rules, (2012) Cap. 155L, § 226 (H.K.).

50. H.K. MONETARY AUTH., GUIDELINE ON AUTHORIZATION OF VIRTUAL BANKS CONSULTATION CONCLUSIONS 7, 9 (2018), <https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2018/20180530e3a1.pdf> [<https://perma.cc/C48B-V9EF>]. See Press Release, H.K. Monetary Auth., Guideline on Authorization of Virtual Banks (May 30, 2018) <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2018/05/20180530-3/> [<https://perma.cc/6HCC-VF9D>] (explaining the public consultation role within the process of revising and publishing the Virtual Banking Guideline).

51. Hejian Ma & Simon Wang, Letter to the Editor, *For Virtual Banking to Thrive in Hong Kong, Regulators Must Encourage Small Players and Innovation*, S. CHINA MORNING POST (Aug. 5, 2019), <https://www.scmp.com/comment/letters/article/3021167/virtual-banking-thrive-hong-kong-regulators-must-encourage-small> [<https://perma.cc/S2F9-NV8B>].

52. *Id.*

if prudential requirements could be calibrated according to the level of deposits held by virtual banks. In this case, a proportionate approach is arguably more suitable than a one-size-fits-all approach.

Also relevant to banking capital is banking profit. It is possible that virtual banks will face greater challenges in maintaining both capital and profit levels due to the impact of COVID-19, which has compelled traditional banks to reassess their loan practices as bad loans loom large. Virtual banks will likely follow suit, which could disrupt Hong Kong's financial inclusion agenda. It is uncertain in the following years whether the digital financial infrastructure, which underpins virtual banks' operations, will and can be leveraged to overcome the financial challenges presented by the pandemic.

B. AML/CFT Requirements for Onboarding Clients

Virtual banking typically entails the onboarding of individual customers remotely through electronic channels such as mobile apps or the internet.⁵³ When compared with current operating models of onboarding clients in person—with particular reference to banks' conducting of CDD measures when the customer is in front of staff—onboarding clients remotely may present greater risks to banks, as the HKMA warned in 2019.⁵⁴ The HKMA further pointed out that certain factors aggravate these risks. These factors relate to, *inter alia*, the use of stolen or fake identities and the ability to create multiple fictitious remote account applications, which may pose challenges to deterring and detecting money laundering and other risks associated with financial crimes, apart from probable data security breaches.⁵⁵ These potential risks have profound implications for financial services regulatory compliance given that virtual banks, similar to traditional banks, must comply with requirements under Hong Kong's AML/CFT law⁵⁶ and its AML/CFT Guideline for obtaining and verifying customer information.⁵⁷

53. Memorandum from Carmen Chu, Exec. Dir., H.K. Monetary Auth., to The Chief Exec., All Authorized Institutions (Feb. 1, 2019), https://www.hkma.gov.hk/media/gb_chi/doc/key-information/guidelines-and-circular/2019/20190201c1.pdf [<https://perma.cc/4E6A-8JVH>].

54. *Id.*

55. *Id.*

56. See Anti-Money Laundering and Counter-Terrorist Financing Ordinance, (2019) Cap. 615 (H.K.). The risks associated with remote onboarding clients may not be fully captured by Hong Kong's AML/CFT law and its AML/CFT Guideline for customer due diligence purposes, as the regulations were formed when the onboarding of clients was conducted in person.

57. See H.K. MONETARY AUTH., GUIDELINE ON ANTI-MONEY LAUNDERING AND COUNTER-TERRORIST FINANCING (FOR AUTHORIZED INSTITUTIONS) 8 (2018), <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/guideline/g33.pdf> [<https://perma.cc/G858-G46C>] (“[J]urisdictions, competent authorities, and AIs are expected to identify, assess and understand the ML/TF [Money Laundering/Terrorist Financing] risks to which they are exposed and take AML/CFT measures commensurate with those risks in order to manage and mitigate them effectively.”).

Traditional banks and virtual banks are subject to the same regulatory supervisory standards.⁵⁸ Many established financial processes, including onboarding customers for loans and deposits, are still paper-based, as the regulations dictate that all customer records are to be stored for seven years in digital, microfilm, and paper forms.⁵⁹ Since this storage requirement applies to all banks in Hong Kong, including virtual banks, it is clear that banking is an industry that prioritizes safety over speed or efficiency.⁶⁰

There are pros and cons to this regulatory inflexibility. The pros are that fair competition is ensured among traditional and virtual banks, while the cons would likely include hindering digital financial inclusion. Since regulatory requirements remain the same, it begs the question of whether virtual banks are practically able to take on board the riskier, rejected customers of mainstream banks. This is a point of central policy tension which requires some balancing act between financial inclusion and AML/CFT compliance tests. For virtual banks, it is also about risk perception, given that the onboarding of clients is guided by the risk-based approach. It is debatable whether this risk-based approach—which encourages banks to open accounts for individuals or business entities with higher money laundering and terrorist financing risks but imposes higher responsibility for the continued monitoring of such accounts for a period of time—is consistent with banks’ expectations.

C. Data Privacy Requirements Under The PDPO

The HKMA’s position has been that for the sake of fairness, regardless of whether or what new technology will be deployed, a legal or regulatory framework should be broad and technologically neutral in order to cover all types of banks. Likewise, both manual and electronic records are subject to data protection legislation in Hong Kong if they contain personal data.⁶¹

While the European Union’s GDPR protects “the right not to be subject to a decision based solely on automated processing, including profiling,”⁶² and the right to object to the processing of personal data,⁶³ there are no equivalent provisions protecting those rights in the PDPO. However, it should be noted that

58. H.K. MONETARY AUTH., *supra* note 10, at 2 (“Virtual banks will be subject to the same set of supervisory requirements applicable to conventional banks. That said, some of these requirements will be adapted to suit the business models of virtual banks under a risk-based and technology-neutral approach.”).

59. See Securities and Futures (Keeping of Records) Rules, (2017) Cap. 571O § 10 (H.K.) (“SF(KR)R”). According to section 5.2 of the HKMA’s Supervisory Policy Manual, the SF(KR)R applies to all Authorized Institutions, banks included. See H.K. MONETARY AUTH., SUPERVISORY POLICY MANUAL, Reporting Requirements Relating to Authorized Institutions’ External Auditors under the Banking Ordinance (IC-3) (2003), <https://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/supervisory-policy-manual/IC-3.pdf> [https://perma.cc/3J5S-YZ3K].

60. Khatri, *supra* note 17.

61. The Personal Data (Privacy) Ordinance is the data protection legislation in Hong Kong which contains the data protection principles. Personal Data (Privacy) Ordinance, (2018) Cap. 486 (H.K.).

62. Council Regulation (EU) 2016/679, art. 22, 2016 O.J. (L 119) 1.

63. *Id.* at art. 21.

under the PDPO, data subjects have the right to opt out of direct marketing activities which may otherwise be automatic in some cases.⁶⁴ The PDPO also contains provisions that regulate data users from using personal data in data matching procedures.⁶⁵ Data matching is the process of comparing two sets of personal data individually collected for different purposes via computer programs or by non-manual means,⁶⁶ which is to some extent similar to automated processing or profiling. The main criticism of the PDPO in this area is that the regulation is not robust enough, such that it does not confer an explicit right for the data subject to object, and therefore does not sufficiently protect against the risk of invasion of privacy.⁶⁷

IV

GAPS AND SHORTFALLS IN VIRTUAL BANKS MEETING FINANCIAL INCLUSION

While virtual banking has the potential to be a step towards financial inclusion, it is not able to address every problem with financial access. This Part details the ways in which virtual banking may fall short of meeting the goals of financial inclusion, including problems caused by regulation and limitations that are inherent in the business model of virtual banks.

A. Impact of Regulatory Burdens

The HKMA has maintained that regulations on banks must be technologically neutral. Hence, the same regulatory requirements are applied to virtual and traditional banks, regardless of whether or what technologies are used. This regulatory design is another example of the central policy tension between upholding fair competition—for all banks—and promoting financial inclusion—by fintech banks. It has been criticized for its failure to balance these two goals that are not necessarily contradictory.

Arguably, the HKMA is mistaken in imposing the same regulatory requirements on virtual and traditional banks alike. The HKMA “does not expect virtual banks to offer services that are not possible for traditional banks to provide via their eBanking platforms.”⁶⁸ Critics have questioned this principle, suggesting that there is no “point of issuing virtual bank licenses if the licensees

64. Personal Data (Privacy) Ordinance, (2018) Cap. 486 §§ 35G, 35L (H.K.).

65. *Id.* §§ 30, 31.

66. *See* Personal Data (Privacy) Ordinance, (2018) Cap. 486 (H.K.) (“[A]ny procedure whereby personal data collected for [one] or more purposes in respect of [ten] or more data subjects is compared (except by manual means) with personal data collected for any other purpose in respect of those data subjects . . .”).

67. For one example of the criticism that the PDPO is insufficiently robust, *see* Robin Hui Huang, Cynthia Sze Wai Cheung & Christine Meng Lu Wang, *The Risks of Mobile Payment and Regulatory Responses: A Hong Kong Perspective*, 7 *ASIAN J. L. & SOC'Y*, no. 2, 2020, at 325, 339–340 (“Compared to the PDPO in Hong Kong, the GDPR also grants additional protection to the rights of its citizens. This includes the right to erasure (right to be forgotten), and the right to restriction of processing. Currently, there are no such rights in Hong Kong, and data controllers are only restricted by Principle 2 of the PDPO, which stipulates that any personal data shall not be retained for a period longer than necessary.”).

68. Ma & Wang, *supra* note 51.

are not expected to offer new services”⁶⁹ or to enjoy proportionately different regulatory treatment. Going forward, it is necessary for regulators, lawmakers, and policymakers to consider whether virtual banks should instead be subject to some specific *ex ante* regulation that is not merely technologically neutral and general, but rather acknowledges the differences between virtual and traditional banks. Otherwise, it may be too costly for virtual banks to operate.

Subjecting virtual banks to the same regulatory requirements as traditional banks may prevent them from thriving.⁷⁰ For example, those virtual banks supported by large corporations such as Ant Group, Tencent, Xiaomi, Ping An, Bank of China, and other heavyweight investors may not have difficulty meeting the minimum capital requirement, since they have “more financial capital at their disposal and less pressure to make profits in the short term.”⁷¹ However, the same requirements may exclude fintech start-ups from offering new services, given that the minimum capital requirement is a barrier to entry and thus also a barrier to the provision of new services by small fintech start-ups. The HKMA also does not set clear expectations or make suggestions for the creative financial services that virtual banks could potentially provide.⁷²

The HKMA has been criticized for both the stringent capital requirement and unclear demands on innovation, which may have discouraged fintech start-ups from applying for virtual banking licenses.⁷³ For these reasons, the Hong Kong government was called upon “to review and reform its virtual banking policies to attract virtual bank investors from more diverse backgrounds.”⁷⁴ In sum, the regulatory environment in Hong Kong is such that the policy has clearly been set to promote financial inclusion, while the regulatory framework may hinder financial inclusion.

1. Minimum Capital Requirement

The HKMA’s inflexibility in exploring options for lowering the minimum capital requirement, in line with those applied to virtual bank licensees in comparable jurisdictions—for example, the United Kingdom—has caused public concern. A possible solution is to issue lower banking licenses to fintech start-ups, allowing them to operate as deposit-taking companies rather than fully licensed banks, since they may struggle to meet the stringent capital requirement. In doing so, virtual banks with smaller capital can facilitate digital financial inclusion by extending basic banking services to retail customers, including individuals and SMEs that were previously financially excluded or marginalized.

69. *Id.*

70. *Id.*

71. *Id.*

72. *See id.* (“[T]he HKMA should consider relaxing the capital requirements for virtual bank licensees and setting clear expectations for creative financial services in order for society to benefit from virtual banking.”).

73. *Id.*

74. *Id.*

This proposition also aligns with the spirit of the “tiered account services,” a new initiative by the HKMA that explores, with banks, the introduction of Simple Bank Accounts (SBAs).⁷⁵ SBAs refer to a new “tier of [bank] accounts derived from traditional accounts [which] focus[] on [the] provision of basic banking services such as deposits, withdrawals, [and] local and cross-border remittances.”⁷⁶ Narrowing the service scope and transaction volume required of SBAs means that less extensive CDD measures are required for those accounts.⁷⁷ Progressive or tiered CDD approaches have been developed as a result of the application of the risk-based approach to CDD measures.⁷⁸ By implication, to facilitate financial inclusion, banks must be able to exercise reasonable flexibility with respect to the types of identifying information required.⁷⁹ This is an example of how regulations towards both the minimum capital and AML/CFT requirements may be relaxed.

2. AML/CFT Compliance Requirement

According to KPMG International’s *Global Anti-Money Laundering Survey*, issued in 2014, the cost of AML/CFT compliance “continue[s] to rise at an average rate of 53 percent [per annum] for banking institutions, exceeding previous predictions of over 40 percent [made] in 2011.”⁸⁰ As of 2018, the average bank spends around US\$48 million per year on AML/CFT compliance.⁸¹

Rising AML/CFT compliance costs, uncertainty about the extent to which banks must exercise due diligence, and questions about the implementation of the KYC requirement have the potential to hinder financial inclusion. Indeed, virtual banks have been left reeling from the complexity of a legal and regulatory environment marked by a multitude of rules pertaining to data collection, storage, control, and ownership, inevitable by-products of the interplay between privacy (of personally identifiable information) and the KYC and AML/CFT requirements with which financial institutions must comply.

75. Arthur Yuen, *Tiered Account Services: A New Initiative on Promoting Financial Inclusion*, H.K. MONETARY AUTH: INSIGHT (Apr. 12, 2019), <https://www.hkma.gov.hk/eng/key-information/insight/20190412.shtml> [<https://perma.cc/BCC9-YF77>].

76. *Id.*

77. *Id.*

78. FIN. ACTION TASK FORCE, FATF GUIDANCE: ANTI-MONEY LAUNDERING AND TERRORIST FINANCING MEASURES AND FINANCIAL INCLUSION WITH A SUPPLEMENT ON CUSTOMER DUE DILIGENCE 10 (Nov. 2017) <http://www.fatf-gafi.org/media/fatf/content/images/Updated-2017-FATF-2013-Guidance.pdf> [<https://perma.cc/QJ7Q-ZBC8>].

79. *See id.* at 11 (explaining that flexibility is seen in the risk-based approach of the United States Customer Identification Programme of the Bank Secrecy Act).

80. KPMG, GLOBAL ANTI-MONEY LAUNDERING SURVEY 7 (2014) <https://assets.kpmg/content/dam/kpmg/pdf/2014/02/Global-Anti-Money-Laundering-Survey-O-201402.pdf> [<https://perma.cc/9DKS-YJ4F>].

81. *See Combating Financial Crime*, KPMG (Mar. 2019), <https://home.kpmg/xx/en/home/insights/2019/03/combating-financial-crime-fs.html> [<https://perma.cc/W99N-677A>] (citing John Callahan, *Know Your Customer (KYC) Will be a Great Thing When it Works*, FORBES (July 10, 2018), <https://www.forbes.com/sites/forbestechcouncil/2018/07/10/know-your-customer-kyc-will-be-a-great-thing-when-it-works/?sh=8b007278dbb9> [<https://perma.cc/L48R-PMFL>]).

3. Data Privacy Protection Requirement

As of publication, it is unclear whether changes to privacy requirements will be applied to the digital banking sphere and if so, what these changes will be. Neither is it clear when the HKMA and the Office of the Privacy Commissioner for Personal Data, Hong Kong will come up with a joint action plan to provide greater clarity on how and the extent to which virtual banks will be subject to existing personal data protection requirements.

Public trust is key to virtual banks' success. However, as mentioned in Part I, thirty-eight percent of the respondents of the PricewaterhouseCoopers survey indicated that they did not trust virtual banks with their personal data.⁸² In addition, the lack of privacy right protection in the PDPO against profiling and data matching—as referred to in Part III—will further erode public trust. Unless and until the legal gap can be filled, digital financial inclusion cannot be fully achieved.

4. Virtual Banks' Ongoing Supervision Requirement

With respect to virtual banks' ongoing supervision requirement, the HKMA has said that it “does not consider it suitable to elaborate in the Guideline how specific supervisory requirements will be adapted to suit the business models of virtual banks.”⁸³ The HKMA's view reflects its recognition of the “unknown unknowns” in relation to (1) the virtual banking business model—due to virtual banks' extensive use of cloud technology for data storage and transaction processing⁸⁴—and (2) the new regulatory environment—brought on by fintech, whose exponential growth and speed of development is unprecedented in the building of financial infrastructures.

The HKMA's resolution to not set specific guidelines for the ongoing supervision of virtual banks parallels the ideas in Professor Roger Brownsword's seminal book on law and technology, where Brownsword views regulatory mapping as somewhat difficult because it must contain both normative and non-normative standards.⁸⁵ Examples of normative standards are rules for onboarding clients and keeping records, which are part of the AML/CFT requirements.⁸⁶ In contrast, the Code of Banking Practice, “a non-statutory Code” issued by the Hong Kong Association of Banks and “updated from time to time in response to market developments and new or changes to relevant laws and regulations,”⁸⁷ is normally treated as a non-normative standard. While regulators may be aware of the normative standards as they set the legislative parameters, they may not find

82. Baura, *supra* note 2.

83. H.K. MONETARY AUTH., *supra* note 50, at 3.

84. *See id.* at 6–7 (explaining in response to comments about how “virtual banks would make extensive use of cloud technology and outsource data storage and transaction processing to third-party service providers” that the HKMA remains open-minded about alternatives for outsourcing).

85. BROWNSWORD, *supra* note 35, at 192–98.

86. *See supra* Part III.B.

87. H.K. ASS'N OF BANKS, CODE OF BANKING PRACTICE (Oct. 19, 2018), <https://www.hkab.org.hk/DisplayArticleAction.do?sid=5&ss=3> [<https://perma.cc/D86V-76DU>].

it necessary or possible to include the non-normative standards, referring to the professionals' codes of conduct as an example. The non-normative standards may not be known by the regulatees or may be considered to be outside the regulatory purview, unless they are spelled out by the banking associations.

B. Limitations in Virtual Banks' Business Model

Virtual banks may benefit from an open banking business model, in which banks work with third-party developers to further their own financial operations. In addition to the virtual banking licensing framework, the implementation of the Open API framework⁸⁸ also allows for access to credit and new products “that cater to an array of niche markets underserved by the large banks,” thereby increasing financial inclusion.⁸⁹ Open APIs, which combine digital services offered by multiple companies, including banks and non-bank fintech firms, have been “applied by over 50% of incumbent banks.”⁹⁰ APIs play a significant role in financial inclusion as they have the potential to “enable secure, controlled, cost-effective and granular access to data and/or functionality of systems.”⁹¹ An API ecosystem is conducive to financial inclusion.⁹² Indeed, one of the policy objectives for the Open API framework is to “allow banks and their partners (called third party service providers, or TSPs),” to access and use bank generated data to provide a broader scope of services.⁹³

Even so, the development of open banking—through the API framework—is allegedly “stalling as the industry ‘is clouded by uncertainty on data and privacy governance.’”⁹⁴ The slow transition to a truly functional API ecosystem is thus impeding greater access to credit, which in effect disrupts financial inclusion efforts mobilized by the HKMA and the banking industry.

Both traditional and virtual banks can implement an open banking model, and may do so if they are interested in increasing digital revenue now that they are competing against each other. The increased partnership between banks and

88. H.K. MONETARY AUTH., OPEN API FRAMEWORK FOR THE HONG KONG BANKING SECTOR 1 (July 18, 2018), <https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2018/20180718e5a2.pdf> [<https://perma.cc/ZQ2F-EMUY>].

89. *Open Banking Development Stalls in Hong Kong*, FINTECH NEWS HONG KONG (Oct. 19, 2020), <https://fintechnews.hk/13700/open-banking/open-banking-development-stalls-in-hong-kong/> [<https://perma.cc/Q3TE-TYEG>].

90. *Id.*

91. H.K. MONETARY AUTH., *supra* note 88, at 2.

92. *Id.* (noting that at the initial stage the Open API framework focuses on retail banking).

93. *Id.* at 1–2.

94. FINTECH NEWS HONG KONG, *supra* note 89 (quoting Patrick Chan, S&P Global Ratings, *Tech Disruption in Retail Banking: Hong Kong's Large Banks Are Pioneering The City's Fintech Development*, S&P GLOB. RATINGS (June 3, 2020), <https://www.spglobal.com/ratings/en/research/articles/200603-tech-disruption-in-retail-banking-hong-kong-s-large-banks-are-pioneering-the-city-s-fintech-development-11396251> [<https://perma.cc/7SGS-AAPT>]; see also Frances Gagua, *Incumbent Lenders Rethink Business Models in Race Against Virtual Banks*, ASIAN BANKING & FIN. (Sep. 25, 2019), <https://asianbankingandfinance.net/retail-banking/exclusive/incumbent-lenders-rethink-business-models-in-race-against-virtual-banks> [<https://perma.cc/NDC3-B3LH>] (noting that “open banking has yet to gain full momentum in Hong Kong” due to the lack of virtual infrastructure).

TSPs, which allows banks to redirect customers to user interfaces (for example, websites and mobile apps), prompted the HKMA to issue the Open API Framework on July 18, 2018 for open API implementation. “An API is an interface that allows [banks] to synchronize, link and connect the database of service with any application”⁹⁵ provided by TSPs, as the TSPs may interface with customers to provide services under the Open API Framework. Despite the potential benefits of opening up virtual banks’ data vaults to TSPs, “open banking has yet to gain full momentum in Hong Kong” as much of the infrastructure that would allow virtual banks to flourish is not yet in place.⁹⁶ It can be difficult to identify further gaps or shortfalls in virtual banks’ business models because of the dearth of empirical evidence available for evaluation. The reasons for this are two-fold. First, virtual banks in Hong Kong do not publicly disclose details of their business models. Second, the launch of virtual banks has been seriously delayed due to the COVID-19 pandemic. The issue of whether there are any gaps or shortfalls in digital financial inclusion caused by virtual banks’ business models will therefore have to be revisited in due course.

V

CONCLUSION

Financial inclusion is easier said than done, as it requires the concerted efforts of both the regulators and the regulatees—the banking industry—as well as the cooperation of customers.⁹⁷ It is unclear to what extent the HKMA expects improvements to be made towards this regulatory aim through the establishment of virtual banks. There are also external factors creating further uncertainty that go beyond the reach of virtual banks: for example, loyal clients—especially those with the three note-issuing banks in Hong Kong, which together control most of Hong Kong’s banking—may still prefer to continue business with these incumbent banks, although they may not mind opening a new bank account with one or more of the eight virtual banks.⁹⁸ Although easier account opening is quite achievable and, once achieved, would bring the industry one step closer to financial inclusion, there must be “enough product innovation to justify so many banks.”⁹⁹ Eight new licenses may be five or six too many, as one former banking research analyst has warned.¹⁰⁰ Regardless of its outcome, Hong Kong’s experiment with virtual banking will likely remain a noteworthy attempt to further digital financial inclusion.

95. Gagua, *supra* note 94.

96. *Id.*

97. Khatri, *supra* note 17.

98. *Id.* (“Of all the [Licensed Banks], just three names — HSBC . . . , Standard Chartered, and Bank of China (HK Holdings) — control [two-thirds] of the retail banking, [three quarters] of the mortgage market, [three quarters] of the credit card business, and half of the deposits.”).

99. *Id.*

100. *Id.*